

FIELD DEPENDENCY, INTIMACY OF TOPIC
AND INTERPERSON DISTANCE

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CHAPTER I

INTRODUCTION AND BACKGROUND

The ways in which people use physical space in their interpersonal interactions have recently elicited sustained interest on the part of social scientists. Most of the research on the use of space by persons has focused on the physical distance which is established between two or more individuals who are interacting in a social context. What is more often studied then is the relationship of other variables to the physical distance between individuals engaged in the interaction. The term interperson distance is an appropriate designation for this concept and will be used in the present paper.

As observed earlier, there has been relatively little theory published about interperson distance. Sommer, who has collected some of the experimental data, hasn't yet proposed a theory. He does observe, however, that one way in which people use space is to avoid stressful encounters (1965). Spatial avoidance, for Sommer, is a first line of defense against interperson stress. Data from both animal studies and research with humans support the stress conception. Christian (1960) was able to establish that collapse of a population of Sika deer was due to the stress of overcrowding which these animals could not avoid. Children have been shown to exhibit increased aggression when exposed to too much physical closeness to other children (Hutt and Vaizy, 1966). When spatial avoidance of stress is not possible, other alternatives

develop. Sommer believes that limitation of visual contact would be an example of a second line of defense. Hall (1966) shares Sommer's view that too much closeness is stressful. In addition he suggests that the ways people behave spatially constitute a specialized form of communication. He sees spatial behavior as unconscious and in need of articulation.

A theory which is basic to the present research is the Intimacy Theory of Argyle and Dean (1965). Their findings give support to the hypothesis that physical distance, eye contact, amount of smiling and intimacy of topic interact in such a way that a comfortable balance (i.e., a balance of approach and avoidance tendencies) of intimacy with another person is maintained. In support of this theory, the authors demonstrated that with increasing physical closeness of another person, subjects engaged in decreasing amounts of eye contact. Exline (1965) found subjects increased eye contact as the topic of conversation became less intimate.

Kueth's research also supports the concept of equilibrium of approach and avoidance tendencies and in addition demonstrates the importance of role variables in determining interperson distance. Kueth (1962a) uses as a measure the way subjects' distance and position felt figures of various objects, usually of humans. Where the particular way in which the figures are grouped, for example, the grouping of the figures of a woman and a child, occur with high frequency, Kueth calls these "social schemas." It has been shown that when subjects are required to judge the distance between figures of humans which are frequently grouped together, they will distort their judgment of distance

by replacing the objects too close together (Kuethe, 1962b). Kuethe (1962a) demonstrated these phenomena by employing the technique of serial reproduction. Subjects were required to judge the distance between human figures which were initially separated by a distance of 30 inches. Each subject, after the first subject, made his judgment of the distance between the figures from the placement of the previous subject. The end result was that the figures were moved closer and closer together until a stabilization distance was reached. Kuethe explained the subject's distortion of distance as due to a social schema that "people belong together." The stabilization distance obtained in his study suggests, in addition, that there is also a social schema that "people shouldn't be too close together."

Kuethe proposes that when people possess common schemas, it is because they have shared similar experiences and that this in turn leads to similar behavior. In support of this assumption, Kuethe and Weingartner (1964) found that normal subjects tend to pair mixed figures while homosexual subjects pair figures of the same sex. Weinstein (1961) found that children who felt most accepted by their parents tended to underestimate the distance between human pairs of figures. These studies suggest that the approach-avoidance forces which operate to determine the distance between figures, are linked to the behavior of the subjects making the judgments.

Early studies which used the space established between individuals as a dependent variable were focused primarily on the study of group communications. They provide, however, data which are pertinent to the

present research. Steinzor (1950), for example, found that in small discussion groups, individuals who were seated close together in a circle interacted less than members who were farther apart. Hare and Bales (1963) reported data which substantiated Steinzor's results. In the Hare and Bales study, however, it was discovered that during brief "social breaks" subjects interacted most often with members who were seated near to them. In a similar finding, Sommer found that social interactions among hospital personnel during lunch periods occur most frequently among members who are near to one another.

Steinzor accounted for the more frequent interaction among distant members as due to the "greater physical and stimulus value a member has for others when he is more nearly opposite them in a circle." While this interpretation is plausible, it is also conceivable that the more distant members interacted to a greater extent because the topics of conversation in the task-oriented group were appropriate to a greater interperson distance. In the more "intimate" social groups the conversation topics may have been such that a closer interperson distance was perceived as appropriate.

The more recent research on interperson spatial behavior has attempted to elucidate the way in which the characteristics of the situation and of the individuals involved regulate the distance at which people interact. Lotte and Sommer (1967), for example, have shown that subjects will choose closer interperson distances to people who are perceived as members of their own status than to persons perceived as belonging to either higher or lower status. In similar vein,

subjects will seldom sit beside leaders when other positions are available (Sommer, 1961). In a large scale study of seating conducted on three college campuses, it was found that seating by race and by sex departed from chance variation (Campbell, Kruskal, and Wallace, 1966). Dineen and Garry (1955) found that students in grade schools sat closest to members of their own socioeconomic class.

The relationship between the individuals involved also influences interperson distance. Friends are seen as interacting at closer distances than acquaintances who, in turn, are seen as interacting at closer distances than strangers (Little, 1965).

The context and purpose of the interaction also contributes to the choice of interperson distance. In situations where socializing is encouraged, people sit closer together than in situations where interaction is discouraged (Sommer, 1965). In general, casual groups prefer corner seating, cooperating groups tend to sit side by side, co-acting groups, for example, students working independently on study assignments, in a distant arrangement, and competing groups opposite one another (Sommer, 1965).

While individual differences would be expected to influence interperson distance, there is but one study which specifically points this up. Hare and Bales (1963) found that dominant subjects tend to choose seats which, from previous studies, had been identified as positions associated with high verbal interaction.

The studies reviewed give support to the assumption that numerous factors influence interperson distance. The influence of status,

role, task, setting, group purpose, the relationship between the individuals involved and their personality traits have been shown to contribute to an equilibrium of approach and avoidance tendencies represented by the distance at which people choose to interact with other people.

In the present study, the author will test hypotheses concerning relationships among intimacy of topic and certain personality trends in determining choice of interperson distance. Role and other situational variables mentioned above, including the person related with, will be controlled as will eye contact and orientation.

The personality variable selected for study in the present research is the Field Dependency-Field Independency dimension (Witkin, Dyk, Fateron, Goodenough and Karp, 1962). Witkin and his associates have conducted an extensive series of studies of this variable. On the basis of evidence obtained from these studies, they describe a dimension of psychological functioning which they call Differentiation. Progress toward Differentiation (Field Independence) is said to be characterized by increased articulation, that is structuring and analysis, of experience. This would include a more articulated way of experiencing the world, a more clearly defined body concept, and a growing sense of separate identity. Another characteristic of the differentiated person is the achievement of specialized, structured defenses and controls such as intellectualization and isolation in contrast to denial and repression which are said to characterize the defenses of the less differentiated (Field Dependent) person.

In support of the above hypotheses, Rudin and Stagner (1958) found that differentiated subjects evaluate themselves consistently across a variety of differently perceived situations, while less differentiated subjects tended to change their self-evaluation with the changing situation, suggesting that field independent subjects have a greater sense of separate identity than do field dependent subjects. Konstadt and Forman (1965) found that when taking a test under stress conditions, field dependent children spend more time looking at the examiner than do field independent children. This latter study suggests the greater need for guidance and structuring on the part of field dependent children.

In addition, field dependent subjects, when compared to field independent subjects, have been shown to demonstrate greater use of perceptual defense (i.e., repression) to words with emotional connotations (Witkin, 1965).

The differences in the characteristics of field dependent and field independent persons lead to certain predictions which are pertinent to the present study. The finding that field independent subjects have relatively consistent views of themselves as situations vary, together with the finding that they have relatively sophisticated defenses, suggests that they would be less vulnerable to the stress of increasing intimacy than field dependent subjects. From this, we would expect that increasing intimacy due to topic changes would have less effect on the interperson distance of field independent subjects than it would have on the interperson distance of field dependent subjects.

The fact that field dependent subjects have relatively less ability to structure ambiguous situations and tend to look to the environment suggests they might choose a relatively smaller interperson distance to the experimenter.

The finding that field independent subjects have more sophisticated defense systems than field dependent subjects does not, however, insure that their defenses are more adequate in preventing stress. A measure of anxiety will be included in the present study to evaluate the stress experienced by all subjects. It is expected that the general effect of anxiety will be to increase interperson distance for all subjects.

The present study then will test the following hypotheses:

- I. Field dependent subjects will choose smaller interperson distances than will field independent subjects.
- II. As intimacy of topic is increased, interperson distance will increase for both field dependent and field independent subjects.
- III. Field dependent subjects will show greater variation in interperson distance when topics vary in intimacy than will field independent subjects.
- IV. Field dependent subjects will demonstrate less interperson distance than will field independent subjects when the topic is low in intimacy.
- V. As the anxiety level of subjects is higher, interperson distance will be greater.

CHAPTER II

METHOD

College students, who served as subjects in the present experiment, were first administered two group tests. The first test measured field dependency. The second test measured general anxiety level and served as a preexperimental measure of anxiety. In later individual sessions, each subject participated in an experiment in which he first wrote and then presented orally his thoughts and feelings about two topics which varied in degree of intimacy. The distance between the subject and experimenter, established by the subject during the verbal presentation of his topic, was used as a representation of each subject's interperson distance (ID). Immediately following his participation in the experiment, each subject was administered a test measuring anxiety associated with his participation in the experiment. This test served as a postexperimental measure of anxiety. The measures of ID, field dependency and the pre- and postmeasures of anxiety provided the raw data of this experiment.

Subjects

The subjects were 80 white, male students enrolled in undergraduate introductory psychology courses at the University of Florida. Their participation in the experiment fulfilled one of the requirements of the psychology courses. Their ages ranged from 18 to 21.

In a preexperimental session all 80 subjects were required to take, in small 7 to 15 member groups, a measure of field dependency. The test selected as a measure of field dependency was a group form (Form CF-1) of the individual Embedded Figures Test (EFT) (see Appendix B). This test is an adaptation of the figures developed by Gottschaldt (in Witkin et al., 1962, p. 39). Group Embedded Figures Tests, like the individual EFT, require the subject to locate a figure within a larger, more complex figure. CF-1, Part 1, is nearly identical to Form III, also a measure of field dependency. Form III has been shown to correlate .62 with the individual EFT (Jackson, Messick, and Myers, 1964). The correlation between the EFT and the Rod Frame Test is .64 for college males (Witkin et al., 1962, p. 44). The latter measure is one of the basic laboratory methods used to define field dependency (Jackson, Messick, and Myers, 1964). On the basis of correlational studies between the various group forms and the individual EFT, Witkin, Messick¹ and Derman¹ concluded that CF-1 was a satisfactory substitute for the individual EFT for group comparisons or correlational studies.

Assessment of Anxiety Level

Immediately following the administration of CF-1, all subjects were given a test to measure general anxiety level. The test selected as a measure of anxiety was the Multiple Affect Adjective Check List (MAACL) (Zuckerman, 1960). This test contains 61 single-word items

¹This view was expressed in a letter from Mr. Derman to Educational Testing Service, March 12, 1968.

(see Appendix C). The subject is asked to check only those items which describe his feelings. The anxiety scale of the MAACL (see Zuckerman, 1960, pp. 6-8) measures changes in anxiety over relatively brief time periods. It has been shown to be useful as a measure of stress in perceptual isolation (Zuckerman, Albright, Marks, and Miller, 1962), hypnotically induced anxiety (Levitt, den Breeijen, and Persky, 1960), and anxiety accompanying childbirth (Zuckerman, Nurnberger, Gardiner, Vandiveer, Barrett, and den Breeijen, 1962).

Procedure

Each subject was seen individually within 2 weeks after his participation in the group testing sessions. Each of the 80 subjects was told that the experimenter was interested in knowing what thoughts and feelings students have about two topics (see Appendix A, "Instructions"). Subjects were asked to write a brief composition on each of the following topics:

- (1) My favorite hobby is _____.
- (2) What concerns me most about my relationships with the opposite sex is _____.

After writing compositions on both topics, each subject was informed that his next task was to present verbally, to the experimenter, the ideas and thoughts about which he had written in his composition. The order of the presentation of these topics was counterbalanced. The subjects were required to present their topics in the experimental room*

*The experimental room was a typical classroom. It was visible from the door of the office where the subject had written his composition.

down the hallway from the office where they had written their compositions. Subjects were told that the experimenter would go to the experimental room and when ready would signal them by ringing a bell. At this point they were required to leave the office and walk up to the experimenter. Each subject was required to make four trips (trials) in which he walked up to the experimenter in preparation for presenting a topic. The presentation of topics, however, occurred only on Trials 3 and 4. Trials 1 and 2 were nonpresentation trials. Subjects were told that Trials 1 and 2 were practice trials designed to assure the experimenter that the subject understood the procedure. The purpose of the nonpresentation trials was to gain a measure of the reliability of the ID subjects chose in the experimental situation. The nonpresentation trials were free of variations in distance due to the influence of the different topics.

A Pearson Product Moment correlation of .82 ($p < .001$), between the distances on Trial 1 and those on Trial 2, indicates that subjects in this study tended to be consistent in the distances which they chose.

After completing each of the trials, the subject returned to the office to await the signal for the next trial to begin. When the subject left the experimental room the distance from the position where he had stopped to the fixed position of the experimenter was measured and recorded. Measurement of this distance was made possible by the use of a 20-foot strip of black rubber rug of the type often found in long hallways. As each subject entered the door of the experimental room, it was necessary for him to cross an area which was

covered with a slight film of powder. Then, as the subject approached the position of the experimenter he left traces of the powder on the rug. These tracks afforded measurement of the distance between the point where each subject stopped and the position of the experimenter.

To control the effect of eye contact, all subjects were required to "look right at the experimenter" from the time each trial began until they had completed that trial. The position of the experimenter in the experimental room afforded continuous eye contact from the moment the subjects left the office. In addition to limiting the opportunity for subjects to reduce intimacy by looking away from the experimenter, continuous eye contact also prevented the subjects from noticing the powder or the rug used in the experiment. In a pilot study of this procedure, only one of 25 subjects was able to identify the measurement of distance as a variable in the study.

Immediately following the completion of the final trial, each subject was required to fill out the MAACL. The instructions during this postexperimental anxiety measure were altered in order to measure anxiety associated with the experiment. To accomplish this, the second sentence of the instructions was changed to the following: "Check the words which describe how you felt during the experiment."

After completing the postexperimental measure of anxiety, each subject was asked to state what he believed to be the purpose of the experiment. In addition, he was asked to discuss his feelings about the various parts of the experiment.

Selection of subjects for purposes of testing the hypotheses related to field dependency-independency was accomplished by dropping the subjects whose scores were in the middle range. Subjects who scored from 0 to 10 on the field dependency test were identified as field dependent (FD). Subjects scoring 17 or above were identified as field independent (FID). This procedure provided the maximum difference, between the groups, that could be obtained without reducing the numbers in each group beyond a reasonable limit. The use of this procedure resulted in the selection of 24 subjects in each of the groups.

CHAPTER III

RESULTS

Three of the hypotheses in the present study deal with predictions which relate to field dependency. Data on the distribution of field dependency scores obtained from the total sample of 80 subjects will therefore be presented first. Figure 1 presents the field dependency frequency distribution. Inspection of Figure 1 indicates that the distribution of field dependency scores approximate a normal distribution. The mean of the scores is 14.35 and the standard deviation is 5.83.

Hypothesis I of the present study deals with a theorized relationship between field dependency and interperson distance (ID). Table 1 presents the mean ID's of 24 subjects selected as highly field dependent (FD) and 24 subjects selected as highly field independent (FID). Inspection of the means in Table 1 reveals that the mean ID of FD subjects was smaller than the mean ID of FID subjects on all four trials. A graphic presentation of the relationship between the FD-FID means is shown in Figure 2. (A difference in ID as trials increase is also evident in Figure 2 and will be discussed later.) Table 2, which provides a Lindquist, Type 1, analysis of variance (Lindquist, 1953, pp. 266-273) for the effect of high and low field dependency on ID, reveals that the above mean differences are highly significant ($p < .01$). Hypothesis I thus receives strong support.

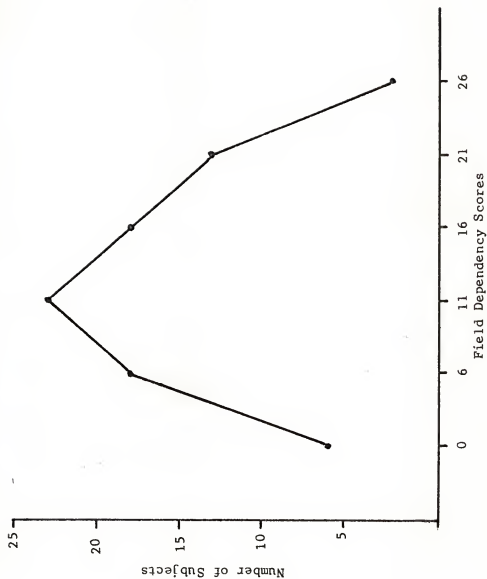


Figure 1. Frequency distribution of the field dependency scores.

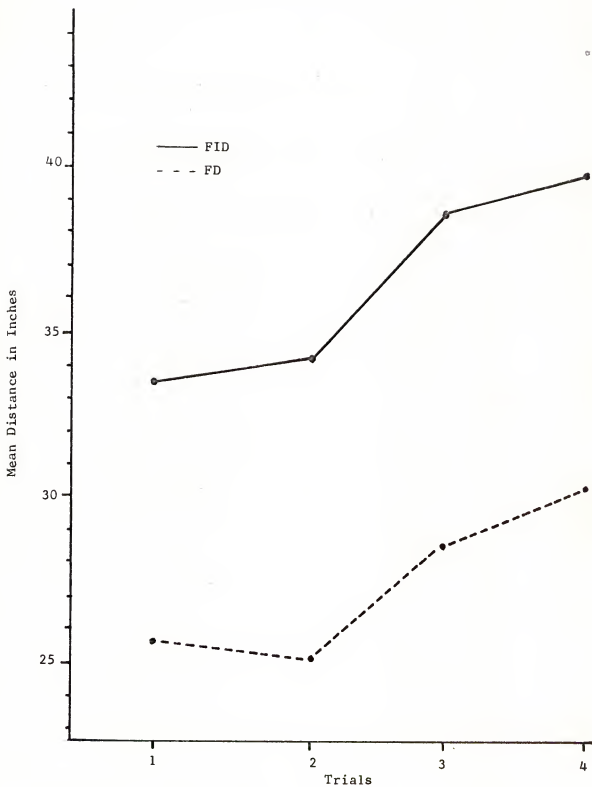


Figure 2. A graphic presentation of the differences in mean ID between FD and FID subjects. (N = 24 for each group.)

TABLE 1
MEAN ID OF FD AND FID SUBJECTS FOR EACH TRIAL
(N = 24 for each group)

	Trial 1		Trial 2		Trial 3		Trial 4	
Field Dependent	$\bar{X}$	25.67	$\bar{X}$	25.08	$\bar{X}$	28.63	$\bar{X}$	30.38
Field Independent	$\bar{X}$	33.88	$\bar{X}$	34.46	$\bar{X}$	38.79	$\bar{X}$	40.21

TABLE 2
ANALYSIS OF VARIANCE FOR THE EFFECT OF FIELD DEPENDENCY
AND TRIALS ON ID

Source	Sums of Squares	df	Mean Squares	F
Between Subjects	28681.99	47	610.26	.00
Field Dependency (G)	4237.52	1	4237.52	7.97**
Error	24444.47	46	531.40	.00
Within Subjects	5522.50	144	38.35	.00
Trials (A)	1133.69	3	377.90	11.95**
G x A	26.35	3	8.79	.28
Error	4362.46	138	31.61	.00
Total	34204.49	191	179.08	.00

* $p < .05$

** $p < .01$

A further analysis, related to Hypothesis I, was conducted to determine the degree of the relationship between field dependency and ID for the total distribution of field dependency scores obtained from the 80 subjects in the original sample (the raw data for each subject are tabulated in Appendix D). Pearson Product Moment correlation coefficients for the relationship between field dependency and ID appear in Table 3. The size of these correlations, ranging from .26 to .30 is small, but it is clearly significant.

TABLE 3
PEARSON PRODUCT MOMENT CORRELATION
BETWEEN FIELD DEPENDENCY AND ID

Trial 1	r = .263	N = 80*
Trial 2	r = .303	N = 80**
Trial 3	r = .302	N = 80**
Trial 4	r = .286	N = 80**

* $p < .05$

** $p < .01$

Hypothesis II made the prediction that a high degree of topic intimacy would be associated with an increase in ID for all subjects ($N = 80$). A t-test analysis for correlated data of the difference between the mean ID for each topic gave results in the predicted direction, but these were not significant ($t = 1.71$, $p > .05$). A further analysis of the relationship between topic intimacy and ID was conducted on the 48 FD and FID subjects. The mean ID for each group for each topic is presented in Table 4 and is shown graphically in

Figure 3. As can be seen by inspection of Table 4 and Figure 3, the mean ID's for each topic level are approximately equal.

TABLE 4
MEAN ID FOR HIGH FD AND HIGH FID SUBJECTS FOR
EACH LEVEL OF TOPIC INTIMACY
(N = 24 for each group)

	Sex	Hobby
Field Dependent	$\bar{X}$ 29.67	$\bar{X}$ 29.33
Field Independent	$\bar{X}$ 39.91	$\bar{X}$ 39.08

Table 5 presents an analysis of variance (Winer, 1962, pp. 302-309) for the effect of topic intimacy and FD on ID. The F value, representing the effects of topic intimacy, is only .16. It is clear, therefore, that Hypothesis II is not confirmed and the attempt to demonstrate a relationship between intimacy of topic and ID in the present study was unsuccessful. The findings summarized above are consistent with the postexperimental comments of the subjects who indicated that they did not find either topic stressful.

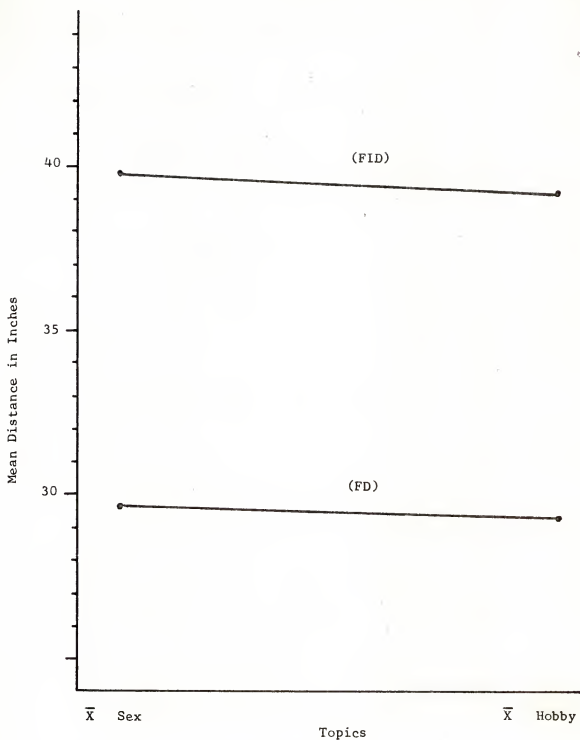


Figure 3. A graphic presentation of the mean ID of FD and FID subjects for two levels of topic intimacy. (N = 24 for each group.)

TABLE 5
ANALYSIS OF VARIANCE FOR THE EFFECT OF FIELD DEPENDENCY
AND INTIMACY OF TOPICS ON ID
(N = 48)

Source	Sum of Squares	df	Mean Squares	F
Between Subjects	17607	47	374.617	-
Field Dependency (G)	2400	1	2400.00	7.26*
Subjects within Groups	15207	46	330.587	-
Within Subjects	2431	48	-	-
Intimacy Level (A)	8.16	1	8.16	.16
G x A	1.50	1	1.50	.03
A x Subjects within Groups	2421.34	46	52.63	-

* $p < .05$

Hypotheses III and IV made differential predictions about the ID's of the personality groups, as a result of differences in the level of topic intimacy. Hypothesis III predicted greater ID variation by FD subjects as topics varied in intimacy, while Hypothesis IV predicted that for topics low in intimacy the ID of FD subjects would be relatively smaller. Examination of the field dependency-intimacy level (G x A) interaction in Table 4 suggests strongly that there was no differential ID reaction to topics which could be attributed to field dependency. Inspection of Figure 3 reveals graphically the degree of similarity between the ID reactions of the two groups to topic differences. Therefore, Hypotheses III and IV are not confirmed.

Hypothesis V predicted a positive association between level of anxiety and ID for both FD and FID subjects. Pearson Product Moment correlations were computed on the data obtained from the original 80 subjects to test this hypothesis. Table 6 reveals that all the correlations dealing with this hypothesis are in the predicted direction but that, with the exception of the correlation between postexperimental anxiety and ID on Trial 1, none reaches a significant level. Among the preexperimental measures, only the correlation with ID on Trial 1 ($r = .21$) approaches significance. The postexperimental anxiety and ID correlations, while higher, are still small. The postexperimental anxiety (Trial 1) correlation is significant at the .05 level ($r = .22$), and this level of correlation is relatively stable across Trials 2, 3, and 4. Hypothesis V thus receives moderate support, but it is clear that anxiety accounts for only a small amount of the variation in ID in the present study.

TABLE 6
PEARSON PRODUCT MOMENT CORRELATIONS BETWEEN MEASURES
OF PRE AND POST ANXIETY AND ID

	Pre Anxiety	Post Anxiety
Trial 1	$r = .21, N = 80$	$r = .22, N = 80^*$
Trial 2	$r = .02, N = 80$	$r = .19, N = 80$
Trial 3	$r = .07, N = 80$	$r = .20, N = 80$
Trial 4	$r = .04, N = 80$	$r = .18, N = 80$

* For $N = 80$ subjects, an $r = .2207 = p < .05$ (interpolated).

To determine the combined contribution of both the anxiety measures and the field dependency measure to ID, multiple correlation coefficients for these variables were computed and appear in Table 7

TABLE 7
MULTIPLE CORRELATIONS BETWEEN FIELD DEPENDENCY,
ANXIETY MEASURES AND ID
(N = 80)

		R	R ²	Increase in R ²
Trial 1	Field Dependence	.2632	.0693	.0693
	Pre Anxiety	.3517	.1237	.0544
	Post Anxiety	.3870	.1498	.0260
Trial 2	Field Dependence	.3027	.0916	.0916
	Post Anxiety	.3560	.1267	.0351
	Pre Anxiety	.3560	.1267	.0000
Trial 3	Field Dependence	.3016	.0910	.0910
	Post Anxiety	.3580	.1282	.0372
	Pre Anxiety	.3609	.1303	.0021
Trial 4	Field Dependence	.2857	.0816	.0816
	Post Anxiety	.3322	.1104	.0287
	Pre Anxiety	.3335	.1112	.0008

The only contribution (increase in R square) of the preexperimental anxiety measure occurs on Trial 1. Postexperimental anxiety measures provide a steady contribution of 2 to 3% in R square throughout the trials. The largest joint contribution of the three measures

to ID occurs on Trial 1 ($r = .39$), where they account for 15% of the variance. Thereafter, there is a small decrease in the degree of association of these variables to ID.

As noted when discussing Hypothesis I, trial effects in the present study were highly significant ($p < .01$) (see Table 2). Figure 1 shows that on initial trials both FD and FID subjects chose the smallest ID. Subjects of each group chose a mean ID on the second trial approximately the same as their mean ID on the first trial. When subjects began to present their first topic on Trial 3, there was a significant increase in ID which was maintained on Trial 4. (For a comparison of the trial means using the Newman-Keuls method, see Table 8.)

TABLE 8

THE SIGNIFICANCE OF DIFFERENCES BETWEEN TRIAL MEANS
AS ESTABLISHED BY THE NEWMAN-KEULS PROCEDURE
(N = 80)

Trials		t_1	t_2	t_3	t_4
Ordered Mean		29.77	29.77	33.71	35.29
		t_1	t_2	t_3	t_4
Difference					
Between Pairs	t_1	-	-	3.94*	5.52*
	t_2			3.94*	5.52*
	t_3				1.58

* $p < .05$

There was a nonsignificant trend for subjects to increase their ID on their second presentation of topics. It is important to note that the significant increase in ID on Trials 3 and 4 was unrelated to the topic which was being presented. This is clear from the fact that the order of topic presentation was counterbalanced and also from the fact that differences in mean ID due to the level of topic intimacy did not approach significance.

This finding corresponds to subjects' reports that the task of having to present a topic under the experimental conditions, particularly with constant eye contact, was very stressful to them. The particular topic, however, made no difference to them.

To determine the degree of stress experienced by the subjects in the experimental situation, a t-test analysis for correlated data was conducted between the means of the preexperimental measure and postexperimental measure of anxiety. The difference between these means was highly significant ($p < .001$), thus supporting subjects' statements regarding the stressfulness of the experimental conditions.

A final analysis of the data from the 48 FD and FID subjects was conducted to determine if there were any ID differences which could be attributed to the order in which the topics were presented. The mean ID for each of the possible sequence combinations for each personality group is presented in Table 9.

The greatest overall difference is between the ID means of FD subjects who presented sex first and the FD subjects who presented sex second. A t-test analysis of this comparison is nonsignificant

($t = .99$, $p > .05$). Since all other possible comparisons would represent smaller mean differences in ID, no further computations were indicated. Since the cell N's used for these comparisons were small, these findings do not represent a valid evaluation of sequence effects. The difference in ID occurring for FD subjects who presented hobbies ($\bar{X} = 29.90$) first, and then sex ($\bar{X} = 32.40$), might prove significant with a larger sample.

TABLE 9
MEAN ID FOR FD AND FID SUBJECTS FOR EACH
ORDER OF TOPIC PRESENTATION
(N = 24 for each group)

	First Presentation			Second Presentation		
Field Dependent	$\bar{X}$	Hobbies	29.90	$\bar{X}$	Sex	32.40
Field Dependent	$\bar{X}$	Sex	27.71	$\bar{X}$	Hobbies	28.92
Field Independent	$\bar{X}$	Hobbies	38.46	$\bar{X}$	Sex	40.26
Field Independent	$\bar{X}$	Sex	39.33	$\bar{X}$	Hobbies	40.11

CHAPTER IV

DISCUSSION

The major contribution of the present study is the finding that there are significant differences in the interperson distances (ID) of field dependent (FD) and field independent (FID) subjects. FD subjects chose consistently smaller ID's than FID subjects. This is what we would expect considering the previously discussed personality differences of the two groups. The above findings concerning Hypothesis I are consistent with Argyle and Dean's (1965) Intimacy Theory.

It seems clear from both the significant increase in anxiety scores on the MAACL and the subject reports that the experimental situation was stressful to most subjects. Presumably the anxiety was related to the subject-experimenter interaction. It thus seems likely that both FD and FID subjects would see the experimenter as the source of their anxiety. This fact would be expected to result in increased ID for both FD and FID subjects. FID subjects with their relatively sophisticated defenses would be expected to see in themselves the means of anxiety reduction. FD subjects, however, would be more likely to look to the experimenter as a source of anxiety reduction. This would mean that for FID subjects, the experimenter would represent a negative influence on their ID. For FD subjects

there would be both negative and positive experimenter influences. These latter differences can be characterized as differences in approach and avoidance forces. This would lead to the expectancy that FD subjects, with both approach and avoidance forces operative, would choose a smaller ID than would FID subjects who were influenced primarily by avoidance forces. Interpreting the data in this way makes the relatively smaller ID of FD subjects consistent with what would be predicted from the Intimacy Theory.

There are other studies which support the above interpretation. It has been demonstrated that dependency correlated positively with greater attention to those on whom a subject was dependent (Beller, 1958, in Witkin et al., 1962). Field dependent subjects have been shown to be dependent and moreover to view themselves as dependent (Gordon, 1953, in Witkin et al., 1962).

There is no significant evidence in the present study to support the hypothesis that intimacy of topic is related to ID. Analyzing the data for all 80 subjects, there was a modest trend for the intimate topic to be associated with increased ID. The fact that this trend was no longer present when the same variable was analyzed, using the selected FD and FID subjects, suggests that factors associated with high or low field dependency may have diluted the effect of topic intimacy on ID. The order of topic presentation (see Table 9), discussed in the last chapter, provides information which leads to one possible hypothesis regarding these results. FID subjects showed almost no change in their mean ID regardless of which topic was

presented first. This suggests that if there were any intimacy of topic effects on FID subjects, they succeeded in diluting these effects as far as ID is concerned. This hypothesis is plausible since FID subjects with their more sophisticated defenses might be expected to intellectualize on the more intimate topic and thus tend to equalize the differences between topics.

Turning to the FD subjects, we find that when FD subjects presented the intimate topic first they actually chose a smaller ID than did FD subjects who presented the less intimate topic first. This is, of course, the opposite of what was predicted in Hypothesis II. The net result of this would be a tendency to cancel out some of the already moderate topic effects observed for all subjects.

It seems reasonable to emphasize again that none of the differences in mean ID due to the order of topic presentation were significant. The present conjecture is appropriate, however, in terms of potential research on these variables.

Information obtained from subject reports leads to a different hypothesis related to the failure of topic intimacy to influence ID in the present study. Nearly all subjects reported that they noticed no difference in the difficulty of presenting the two topics. Many reported being stressed, however, by having to present "any" topic under constant eye contact. These subject reports lead to the most parsimonious explanation regarding the failure to confirm Hypothesis II and that is that the contrast between topics was simply not great enough to influence the ID under the experimental conditions used in

this study. Previously mentioned studies (Exline, 1965) support the hypothesis that topic of conversation is variable which influences the amount of eye contact. It seems reasonable to expect that topic intimacy would also affect ID. We must conclude, however, that under the experimental conditions of the present study we were not able to demonstrate this effect.

The failure to obtain a significant ID interaction between the personality groups and intimacy of topic precluded the possibility of obtaining significant support for Hypothesis III or IV. The preceding discussion on the failure to demonstrate a significant topic intimacy effect is relevant to Hypotheses III and IV.

Anxiety, as measured by the MAACL, failed to show a strong relationship to ID in the present study. Though the correlations between anxiety and ID were small, the patterns of the various correlations are what were predictable. The preexperimental measure of anxiety, a measure of general anxiety makes its only contribution to Trial 1, while on Trials 2, 3, and 4 its correlations to ID are negligible. The newness of Trial 1 could account for the greater correlation between general anxiety and ID on Trial 1. As trials progressed and subjects became more familiar with what was expected of them, their general anxiety level would be expected to have less influence on ID. The postexperimental measure of anxiety was related directly to the experimental sessions and the correlations between this measure and ID remained stable throughout the four trials. Among all these correlations, however, only the postexperimental correlation to ID on Trial 1

obtained significance; thus there is only modest evidence that the anxiety variable is related to ID.

Trial effects were highly significant in the present study. Each personality group, while retaining different mean ID's, displayed a similar pattern of means over the four trials (see Figure 1). For each group the mean ID was similar on the first two trials. For each group there was a sharp increase in mean ID on Trial 3 and a moderate increase on Trial 4. These results can also be interpreted with the framework of the Intimacy Theory. The similarity of mean ID, for both groups, on Trials 1 and 2, suggests that subjects established a relatively comfortable level of intimacy on those trials. Apparently this equilibrium was disturbed by increased stress associated with the requirement that subjects verbalize their topics. Since eye contact and other means of reducing anxiety were controlled and not available to these subjects, it is likely that the significant increase in ID on Trial 3 represented their attempt to reestablish a comfortable level of intimacy. The non-significant trend to increase ID on Trial 4 might represent a continued adjustment of intimacy level or it could be response to the cumulative effects of anxiety. In general, then, the significant trial effects, like the differences in ID for the personality groups, are consistent with the Intimacy Theory.

One of the questions raised by the present study related to the source of the stress reported by subjects. This source of stress was identified by the subjects as being the requirement that they give verbal presentations, but they also acknowledge that stress due to presenting

topics was intensified by the constant visual interaction with the experimenter. It is conceivable that the stress of constant eye contact is so great that any verbal presentation which would require concentration would result in increased ID. A clarification of the interaction of these variables would be useful. This really becomes a methodological issue. The issue can be stated most clearly in the form of a question, "How is it possible to test the effect of topic intimacy on ID without having eye contact held constant?" If eye contact is held constant, would it not tend to be a considerable source of error variance with regard to stress and perhaps therefore mask the stress associated with intimate topics?

Another issue of interest to the experimenter relates to Hall's (1966) views that spatial behavior is unconscious behavior. The procedure used in the present study could be modified to test Hall's assumption. Subjects might be required, following Trial 4, to reestablish their ID to the experimenter as best they could from recall, for each of the trials. Since FID subjects are considered to be more articulate in structuring their experience, we would expect them to be more accurate in reestablishing their respective ID's. These modifications of the present procedure should shed some light on how aware people are regarding their spatial behavior.

It is clear that a great number of variables relating to the spatial behavior of humans await investigation.

CHAPTER V

SUMMARY

In the present study, hypotheses were tested concerning certain relationships between intimacy of topic, field dependency, anxiety and interperson distance (ID). It was predicted that increasing the intimacy of topic would result in increases in ID. Subjects selected as highly field dependent (FD) were expected to choose smaller ID's than the ID's chosen by highly field independent subjects (FID). It was anticipated that FD's would demonstrate relatively greater variability in ID with increases in topic intimacy. A positive correlation between anxiety and ID was also predicted.

Eighty undergraduate students were administered a group form (CF-1) of the Embedded Figures Test as a measure of field dependency and the Manifest Anxiety Adjective Checklist (MAACL) as a measure of anxiety. In later individual sessions each subject was required to write, and then present orally his thoughts and feelings about two topics designed to measure different levels of intimacy. For topic presentations each subject had to walk, from the room where he had written on the topics, down a hall and into an experimental room where the experimenter waited. The distance from the point where the subject stood while presenting each topic and the fixed position of the experimenter served as a measure of ID. The subject's path to the

experimenter required that he walk through an area lightly covered with powder and onto a black rug. The resulting tracks thus allowed ID measurement without the subject's awareness. A total of four trips (trials) to the experimental room were made by each subject. Two non-presentation trials, described to the subjects as practice trials, were utilized to measure the reliability of ID ($r = .82$) preceded the two trials on which subjects actually presented topics. After completing their presentation of topics, subjects were again administered the MAACL but with instructions altered in order to measure anxiety associated with the experiment.

FD subjects, as predicted, chose smaller ID's than did FID subjects. It was theorized that both groups saw the experimenter as a stressor during their topic presentations but that while FID subjects saw themselves as the means of reducing the resulting anxiety, FD subjects saw the experimenter as the source of anxiety reduction. Thus FD subjects with both approach and avoidance forces operative would be expected to choose smaller ID's than FID's who would be influenced less by approach forces.

The present study failed to confirm an association between topic intimacy and ID though there were previous data to suggest this relationship. Subject reports indicated that the stress of eye contact (held at a constant level as a control measure) may have marked the effect of topic differences. In addition, there were no interactions between field dependency-independency and topic intimacy as expressed in ID.

The correlations between anxiety and ID were in the predicted direction but were not significant and accounted for negligible amounts of ID variance.

Significant trial effects, due to increases in ID on the trials where subjects began to verbalize their topics, led to the conclusion that subjects were increasing their ID as a function of a disturbance in their equilibrium of intimacy caused by having to verbalize on any topic in the presence of the experimenter.

APPENDICES

APPENDIX A

INSTRUCTIONS TO SUBJECTS

In the group testing sessions the subjects were told:

"I am Marcus Justice. I am doing research which includes the use of some tests which are of interest to me. Your task tonight will be to take two tests and to write on two topics which I will give to you later.

"The first thing I would like for you to do is take this test (CF-1). Read these instructions and after you have done this I will answer any questions you may have."

Subjects were given the test booklet for CF-1. (For the detailed instructions, a copy of the first page of the scale, and the scoring key, see Appendix B.)

After the completion of the field dependency test, each subject was instructed as follows:

"Now I would like for you to take another test." (MAACL) "Read the instructions and then you may begin."

Subjects were given a copy of the general form of the MAACL. (See Appendix C for detailed instructions.)

After the group testing session each subject was seen individually and instructed as follows:

"Now, I want you to write a brief paragraph on each of these topics."

Subject is given a sheet of paper containing the two topics in typed form.

"Write about half a page on each topic."

After each subject has completed his composition, the following instructions will be given:

"Now that you have had a chance to organize your thinking about these topics by writing about them, I would like you now to tell me about each topic. For this purpose, we will use another room at the end of the hall." (Room is pointed out by the experimenter.)

"I want you to remain here while I go to the other room. When you hear this bell ring" (demonstrates) "you are to come to the other room where I will be waiting. Walk right up to me and begin presenting topic number one (or two). From the time you leave this room until you complete your topic, I want you to look right at me. Don't look away. Do you understand?" (Pause to answer any questions the subject has which relate to the task.)

"Before you present your topic, I want you to have a better idea of what you will be doing. In order to accomplish this, we will practice the procedure once or twice. While you wait here, I will go to the other room and when I'm ready I'll ring the bell. When you hear this bell ring, come to the other room and walk up to me as though you were going to present a topic. Remember to look right at me."

After the subject has completed the first practice trial, he is then told: "Now, let's repeat the same thing once more to make sure you have the idea."

When both practice trials are completed the subject will be told the following:

"Now this time, when you hear the bell I want you to walk up to me and present topic number one (or two)."

Immediately following the experiment, each subject will be instructed as follows:

"Now, I want you to look at this test (MAACL). Read the instructions and see if you have any questions."

APPENDIX B

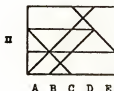
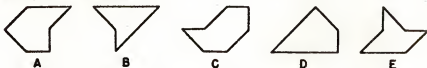
HIDDEN FIGURES TEST--CF-1

Name _____

This is a test of your ability to tell which one of five simple figures can be found in a more complex pattern. At the top of each page in this test are five simple figures lettered A, B, C, D, and E. Beneath each row of figures is a page of patterns. Each pattern has a row of letters beneath it. Indicate your answer by putting an X through the letter of the figure which you find in the pattern.

NOTE: There is only one of these figures in each pattern, and this figure will always be right side up and exactly the same size as one of the five lettered figures.

Now try these 2 examples.



The figures below show how the figures are included in the problems. Figure A is in the first problem and figure D in the second.



Your score on this test will be the number marked correctly minus a fraction of the number marked incorrectly. Therefore, it will not be to your advantage to guess unless you are able to eliminate one or more of the answer choices as wrong.

You will have 10 minutes for each of the two parts of this test. Each part has 2 pages. When you have finished Part 1, STOP. Please do not go on to Part 2 until you are asked to do so.

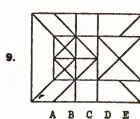
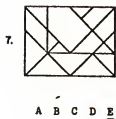
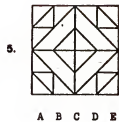
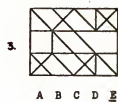
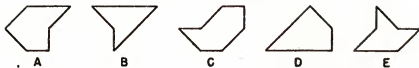
DO NOT TURN THIS PAGE UNTIL ASKED TO DO SO.

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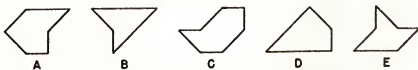
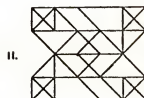
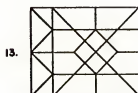
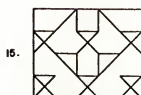
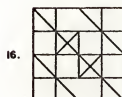
Part 1 (10 minutes)



GO ON TO THE NEXT PAGE

*Underlined letter indicates the correct answer.

Part 1 (continued)

A B C D EA B C D EA B C D EA B C D EA B C D EA B C D EA B C D E

DO NOT TURN THIS PAGE UNTIL ASKED TO DO SO.

STOP.

Part 2 (10 minutes)



A



B



C



D



E

17.

A B C D E

18.

A B C D E

19.

A B C D E

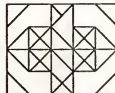
20.

A B C D E

21.

A B C D E

22.

A B C D E

23.

A B C D E

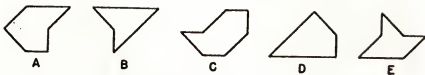
24.

A B C D E

25.

A B C D E

GO ON TO THE NEXT PAGE

Part 2 (continued)

26.

A B C D E

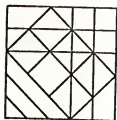
27.

A B C D E

28.

A B C D E

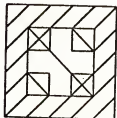
29.

A B C D E

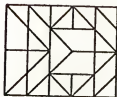
30.

A B C D E

31.

A B C D E

32.

A B C D E

DO NOT GO BACK TO PART 1, AND
DO NOT GO ON TO ANY OTHER TEST UNTIL ASKED TO DO SO.

STOP.

APPENDIX C

THE ZUCKERMAN AFFECT ADJECTIVE CHECK LIST

Below you will find words which describe different kinds of feelings. Check the words which describe how you felt during the experiment. Some of the words may seem alike but we want you to check all of the words that describe your feelings.

- | | | |
|---------------------|-----------------------|----------------------|
| 1. ___ afraid | 21. ___ gay | *41. ___ panicky |
| 2. ___ agitated | 22. ___ gloomy | 42. ___ peaceful |
| 3. ___ angry | 23. ___ grim | **43. ___ pleasant |
| 4. ___ bitter | **24. ___ happy | 44. ___ rattled |
| **5. ___ calm | 25. ___ helpless | 45. ___ sad |
| 6. ___ charming | 26. ___ hopeless | **46. ___ secure |
| **7. ___ cheerful | 27. ___ insecure | 47. ___ sentimental |
| 8. ___ complaining | 28. ___ jealous | 48. ___ serious |
| **9. ___ contented | **29. ___ joyful | *49. ___ shaky |
| 10. ___ contrary | 30. ___ kindly | 50. ___ solemn |
| 11. ___ cool | 31. ___ light-hearted | **51. ___ steady |
| 12. ___ cross | 32. ___ lonely | 52. ___ tender |
| *13. ___ desperate | **33. ___ loving | *53. ___ tense |
| 14. ___ easy-going | 34. ___ mad | *54. ___ terrified |
| *15. ___ fearful | 35. ___ mean | 55. ___ threatened |
| 16. ___ fearless | 36. ___ merry | **56. ___ thoughtful |
| 17. ___ fretful | 37. ___ miserable | 57. ___ unconcerned |
| 18. ___ friendly | *38. ___ nervous | 58. ___ uneasy |
| *19. ___ frightened | 39. ___ overconcerned | *59. ___ upset |
| 20. ___ furious | 40. ___ overwhelmed | 60. ___ warm |
| | | *61. ___ worrying |

*Anxiety-plus words: scored 1 if checked.

**Anxiety-minus words: scored 1 if not checked.

APPENDIX D

TOTAL TABULATED DATA FOR EACH SUBJECT

Subject	Anxiety		Field Dependency	Trial 1	Trial 2	Trial 3	Trial 4
	Pre	Post					
1	4	18	26	40	45	49	49
2	7	12	16	23	20	29	34
3	2	10	15	23	25	26	25
4	6	14	6	18	17	18	17
5	7	14	7	22	26	39	32
6	10	16	7	24	20	21	21
7	3	10	12	14	13	20	22
8	7	11	25	22	18	28	28
9	6	9	5	14	14	20	21
10	4	9	13	12	21	27	29
11	12	11	16	28	29	34	30
12	9	11	23	32	39	37	38
13	5	12	17	38	40	65	66
14	9	8	21	41	71	75	75
15	9	12	18	50	55	51	56
16	9	11	11	32	21	26	32
17	9	3	18	30	28	39	45
18	12	15	18	48	31	38	37
19	12	12	21	23	26	29	29
20	7	12	9	24	31	32	34
21	4	17	13	43	42	37	36
22	10	13	4	20	16	17	19
23	7	12	1	40	40	37	38
24	13	11	10	29	23	29	33
25	2	10	24	38	46	48	48
26	5	10	20	40	32	32	38
27	4	11	19	31	33	32	33
28	8	12	7	53	40	44	54
29	6	12	16	30	23	21	28
30	4	10	9	31	29	42	46
31	4	5	14	19	18	20	19
32	11	16	21	48	38	46	45
33	4	8	15	19	17	20	21
34	1	10	20	25	31	28	31
35	12	14	15	21	16	16	17
36	4	11	10	20	25	23	25
37	5	9	12	31	31	31	34
38	6	11	10	16	16	21	21

APPENDIX (Continued)

Subject	Anxiety		Field Dependency	Trial 1	Trial 2	Trial 3	Trial 4
	Pre	Post					
39	4	19	9	9	14	20	22
40	10	12	15	33	30	32	31
41	10	11	13	25	27	21	21
42	5	11	29	34	35	37	42
43	6	8	13	18	14	15	15
44	6	9	15	28	28	27	24
45	5	14	15	29	27	31	32
46	9	10	15	29	27	31	32
47	3	11	9	39	58	57	58
48	5	9	14	21	29	27	29
49	5	2	10	14	17	32	46
50	10	12	21	41	58	69	72
51	11	12	22	46	46	48	62
52	5	11	5	23	19	17	17
53	10	9	22	20	13	21	19
54	6	6	11	30	30	27	29
55	4	10	17	21	20	20	20
56	7	13	16	26	22	29	29
57	8	8	21	27	23	24	21
58	10	11	9	26	29	44	46
59	7	7	17	48	32	43	36
60	11	11	5	19	18	21	26
61	7	11	16	33	31	37	37
62	9	14	15	44	42	67	69
63	5	8	25	26	26	26	26
64	7	15	15	25	29	24	26
65	9	12	15	23	21	29	31
66	1	7	22	16	20	19	21
67	11	14	9	32	28	36	35
68	7	10	21	28	21	27	29
69	3	6	16	17	24	19	20
70	16	16	15	32	33	40	40
71	9	7	3	23	20	21	21
72	7	4	8	32	26	29	30
73	3	16	16	39	45	50	60
74	3	11	16	48	57	65	65
75	7	10	16	43	37	43	41
76	10	10	12	21	20	24	26
77	7	11	14	22	23	25	22
78	10	12	14	57	60	40	44
79	10	8	10	35	27	24	23
80	6	4	8	24	24	24	21

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BIOGRAPHICAL SKETCH

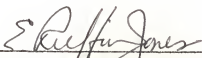
Marcus T. Justice was born in Rutherfordton, North Carolina. He was graduated from St. Petersburg High School in 1950. He served in the United States Army from 1951 to 1954. He attended the University of Florida from 1954 until 1959, receiving a Bachelor of Arts degree in February 1958, and a Master of Rehabilitation Counseling degree in August 1959.

Mr. Justice was employed as a rehabilitation counselor with the State Vocational Rehabilitation Program from 1959 until 1963, when he entered the University of Florida Graduate School, majoring in psychology. Since then he has been the recipient of a Vocational Rehabilitation Training grant and served as a graduate assistant while fulfilling the requirements for the degree of Doctor of Philosophy. Mr. Justice completed a year of internship in clinical psychology at Anclote Manor Hospital, Tarpon Springs, Florida, in August 1967.

In June 1959, Marcus Justice married the former Judith Ann Schleman of St. Petersburg, Florida. They have five children, James Katherine, Amy, Suzanne, and Charles.

This dissertation was prepared under the direction of the chairman of the candidate's supervisory committee and has been approved by all members of that committee. It was submitted to the Dean of the College of Arts and Sciences and to the Graduate Council, and was approved as partial fulfillment of the requirements for the degree of Doctor of Philosophy.

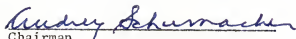
June, 1969



Dean, College of Arts and Sciences

Dean, Graduate School

Supervisory Committee:



Chairman

